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# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/081,417 | 02/22/2002 | Rodney G. Moon | CHA920010020US1 | 1023 |

| | | | EXAMINER |
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| 23550 | 7590 | 03/04/2005 | MACKOWEY, ANTHONY M |

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| ART UNIT | PAPER NUMBER |
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| 2623 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/081,417 | MOON ET AL. |
| | Examiner | Art Unit | |
| | Anthony Mackowey | 2623 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *2/22/2002*.

2a)☐ This action is **FINAL**.          2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/22/2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/22/2002*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)          Office Action Summary          Part of Paper No./Mail Date 20050217

## Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,2, 8,9,11,15,16 and 17 are rejected under 35 U.S.C. 103(a) as being

unpatentable over the combination of U.S. Patent 6,195,453 to Simonoff and U.S. Patent

6,243,504 to Kruppa.

As to claim 1, Simonoff discloses a character recognition system (col. 4, lines 38-44,

Simonoff teaches the invention is performed on a computer loaded with software programs.),

comprising:

an optical character reader system for collecting character data by electro-

optically scanning printed characters (col. 4, lines 50-52; col. 5, lines 3-7, 36-40, Simonoff

teaches a paper check can be scanned and the image input into the computer, the computer

has an OCR program for processing the image file, and the program examining the MICR

numbers in the image.); and

a conversion system for converting the character data to a Magnetic Ink

Character Recognition (MICR) format (col. 5, lines 13-19, Simonoff teaches constructing the

correct series of MICR code characters, a laser printer equipped with MICR magnetic toner, and

printing in MICR character font on the check. Thus, implying the system converts the optically

scanned character data to MICR format, which is stored and printed.).

Simonoff does not disclose a recognition engine for interpreting the converted character data using a MICR algorithm. However, Kruppa discloses a magnetic ink character recognition system and an algorithm by which the characters are identified (col. 10, lines 51-61).

The teachings of Simonoff and Kruppa are combinable because they are both concerned with magnetic ink character strings and documents commonly employing them, specifically bank checks, and optical character recognition. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the recognition engine for interpreting the converted character data using a MICR algorithm as taught by Kruppa in the system taught by Simonoff. Motivation for doing so is obvious in the fact that Simonoff prints the MICR characters in magnetic ink on the receiver's check (col. 8, lines 18-20). This clearly implies the check is to be processed/interpreted later using a MICR system using a MICR algorithm or else the characters would not have to be printed using magnetic toner.

As to claim 2, Simonoff does not disclose the optical character reader system scans at a pel density in a range of approximately 200 to 600 dpi. However, Kruppa teaches an optical character recognition system optically reading magnetic ink characters (col. 5, lines 65-66) and a typical resolution for conventional, photo diode arrays used in such a system fall within the range of 200-300 dpi (col. 6, lines 56-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the optical character reader system taught by Simonoff scan at 200 to 300 dpi as taught by Kruppa. One would have been motivated to do so because using a conventional photo diode array would be more cost effective than constructing or purchasing one capable of scanning at a different, specialized resolution.

As to claim 8, Simonoff discloses a method (col. 2, line 50) for performing character recognition, comprising:

collecting character data by electro-optically scanning printed characters (col. 4, lines 50-52; col. 5, lines 3-7, 36-40, Simonoff teaches a paper check can be scanned and the image input into the computer, the computer has an OCR program for processing the image file, and the program examining the MICR numbers in the image.);

converting the character data to a Magnetic Ink Character Recognition (MICR) format (col. 5, lines 13-19, Simonoff teaches constructing the correct series of MICR code characters, a laser printer equipped with MICR magnetic toner, and printing in MICR character font on the check. Thus, implying the system converts the optically scanned character data to MICR format, which is stored and printed.); and

Simonoff does not disclose interpreting the converted character data using a MICR algorithm. However, Kruppa discloses a magnetic ink character recognition system performing a method and an algorithm by which the characters are identified (col. 10, lines 51-61).

The teachings of Simonoff and Kruppa are combinable because they are both concerned with magnetic ink character strings and documents commonly employing them, specifically bank checks, and optical character recognition. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of interpreting the converted character data using a MICR algorithm as taught by Kruppa in the method taught by Simonoff. Motivation for doing so is obvious in the fact that Simonoff prints the MICR characters in magnetic ink on the receiver's check (col. 8, lines 18-20). This clearly implies the check is to be processed/interpreted later using a MICR algorithm or else the characters would not have to be printed using magnetic toner.

As to claim 9, Simonoff does not disclose the character data is scanned at a pel density in a range of approximately 200 to 600 dpi. However, Kruppa teaches optically reading magnetic ink characters (col. 5, lines 65-66) and a typical resolution for conventional, photo diode arrays falls within the range of 200-300 dpi (col. 6, lines 56-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the character data taught by Simonoff scanned at 200 to 300 dpi as taught by Kruppa. One would have been motivated to do so because using a conventional photo diode array would be more cost effective than constructing or purchasing one capable of scanning at a different, specialized resolution.

As to claim 11, Simonoff is silent with regard to converting step scaling the character data to a pel density associated with a multigap MICR read head, however, Simonoff teaches constructing the correct series of MICR code characters and printing them (col. 5, lines 13-19). Simonoff also teaches laser printers capable of printing high quality graphics meeting MICR standards (col. 2, lines 13-17, 40-47). These teachings imply that when the MICR code character data is constructed and is printed using the disclosed laser printer it has been scaled to meet the MICR standards, which would include a pel density capable of being scanned with a MICR read head.

As to claim 15, Simonoff discloses a program product (col. 2, lines 55-56) on a recordable medium (col. 4, lines 38-44, Simonoff teaches the programs are loaded on a computer, a computer inherently has a hard disk drive on which program data is stored) for performing character recognition, comprising:

means for accessing character data collected by and electro-optical scanning system (col. 5, lines 36-40; col. 4, lines 50-52; lines 57-59, Simonoff teaches the hard copy is scanned and the image inputted directly into the computer, stored in a graphic image file, and an OCR program processing the image.);

means for converting the character data to a Magnetic Ink Character Recognition (MICR) format (col. 5, lines 13-19, Simonoff teaches constructing the correct series of MICR code characters, a laser printer equipped with MICR magnetic toner, and printing in MICR character font on the check. Thus, implying the system converts the optically scanned character data to MICR format, which is stored and printed.).

Simonoff does not disclose a means for interpreting the converted character data using a MICR algorithm. However, Kruppa discloses a computer performing a magnetic ink character recognition method and an algorithm by which the characters are identified (col. 10, lines 51-61).

The teachings of Simonoff and Kruppa are combinable because they are both concerned with magnetic ink character strings and documents commonly employing them, specifically bank checks, and optical character recognition. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a method for interpreting the converted character data using a MICR algorithm as taught by Kruppa in the program taught by Simonoff. Motivation for doing so is obvious in the fact that Simonoff prints the MICR characters in magnetic ink on the receiver's check (col. 8, lines 18-20). This clearly implies the check is to be processed/interpreted later using a MICR algorithm or else the characters would not have to be printed using magnetic toner.

As to claim 16, Simonoff does not disclose the character data comprises a pel density in a range of approximately 200 to 600 dpi. However, Kruppa teaches optically reading magnetic ink characters (col. 5, lines 65-66) and a typical resolution for conventional, photo diode arrays falls within the range of 200-300 dpi (col. 6, lines 56-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the character data taught by Simonoff comprising a pel density of 200 to 300 dpi as taught by Kruppa. One would have been motivated to do so because using a conventional photo diode array would be more cost effective than constructing or purchasing one capable of scanning at a different, specialized resolution.

As to claim 17, Simonoff is silent with regard to converting means scaling the character data to a pel density associated with a multigap MICR read head, however, Simonoff teaches constructing the correct series of MICR code characters and printing them (col. 5, lines 13-19). Simonoff also teaches laser printers capable of printing high quality graphics meeting MICR standards (col. 2, lines 13-17, 40-47). These teachings imply that when the MICR code character data is constructed and is printed using the disclosed laser printer it has been scaled to meet the MICR standards, which would include a pel density capable of being scanned with a MICR read head.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,243,504 to Kruppa in view of U.S. Patent 6,195,453 to Simonoff.

As to claim 21, Kruppa discloses a multi-voting character recognition engine for analyzing an inputted set of printed characters comprising:

A plurality of character recognition systems (col. 5, lines 38-39, both a magnetic ink character recognition and an optical character recognition system) wherein each character recognition system independently analyzes the inputted set of printed characters (col. 9, lines 50-62, Kruppa teaches the optical character recognition is enable after the magnetic character recognition system, thus it is clear they independently analyze the characters.) and wherein one of the character recognition systems includes:

an optical character reader system for collecting character data by electro-optically scanning printed characters (col. 6, lines 35-66, Kruppa teaches the basic components and function of the optical character recognition system.); and

a recognition engine for interpreting the converted character data using a MICR algorithm (col. 10, lines 51-61, Kruppa discloses a magnetic ink character recognition system and an algorithm by which the characters are identified. It is obvious this algorithm can be used to interpret data that has been converted to MICR format.);

a voting system for combining results from each of the plurality of character recognition systems and determining a recognized set of characters (col. 7, lines 49-62; Fig. 3, Kruppa teaches comparing the results of a magnetic ink character recognition system and a optical character recognition system in making a decision concerning the identification of a magnetic ink character string.).

Kruppa does not disclose one of the character recognition systems includes a conversion system for converting the character data to a Magnetic Ink Character Recognition (MICR) format. However, Simonoff teaches constructing the correct series of MICR code characters after performing validation with an optical character recognition program (col. 5, lines 13-19) and printing the characters, implying the verified characters have been converted to MICR format.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the optical character recognition system of Kruppa convert the character data to MICR format as taught by Simonoff. One would have been motivated to do so in order to simplify the processing of the character data by using only one recognition algorithm/program to process the character data from the two capture sources (magnetic and optical) and saving computer resources.

Claims 3,4,6,7,10,13,14,19,20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,195,453 to Simonoff and U.S. Patent 6,243,504 to Kruppa in as applied to claims 1,8,15, and 21 above further in view of U.S. Patent 5,091,968 to Higgins et al. (Higgins).

As to claim 3, the combination of Simonoff and Kruppa is silent with regard to the character data being stored in a grey scale image format. However, Higgins teaches an optical character recognition system employing a scanner generating gray scale data values (col. 4, lines 20-21, 10-15).

The teachings of Simonoff, Kruppa and Higgins are combinable because they are all concerned with optical character recognition. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the character data of Simonoff and Kruppa stored in grey scale image format as taught by Higgins. One would have been motivated to do so in order to preserve all character and image data obtained in the initial scan that may have been eliminated or missed if the character data were scanned and stored in black and white format.

As to claim 4, Simonoff is silent with regard to the conversion system scales the character data to a pel density associated with a multigap MICR read head, however, Simonoff teaches constructing the correct series of MICR code characters and printing them (col. 5, lines 13-19). Simonoff also teaches laser printers capable of printing high quality graphics meeting MICR standards (col. 2, lines 13-17, 40-47). These teachings imply that when the MICR code character data is constructed and is printed using the disclosed laser printer it has been scaled to meet the MICR standards, which would include a pel density capable of being scanned with a MICR read head.

As to claim 6, the combination of Simonoff and Kruppa does not disclose the conversion system converts the grey scale image format to a black and white image format. Higgins teaches converting the grey scale values to binary form (black and white format) relative to reference threshold (col. 6, lines 6-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to convert the grey scale image to black and white format as taught by Higgins because it would eliminate any background noise that may have been introduced during scanning or imperfections present in the paper form, allowing for a more accurate character recognition.

As to claim 7, the combination of Simonoff and Kruppa is silent with regard to the printed characters being printed in an E13B font. They refer to the printed characters as magnetic ink characters, MICR character font or MICR characters. However, the optical character recognition system taught by Higgins identifies E13B characters (col. 7, lines 40-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the printed characters taught by Simonoff and Kruppa be printed in an E13B font

as taught by Higgins. It is well known in the art that documents such as checks utilize the E13B font for printing the magnetic ink characters on the checks (Official Notice). Therefore, it would have been obvious to have the printed characters taught by Simonoff and Kruppa be in E13B font as both teach printing and reading of magnetic ink characters on checks.

As to claim 10, the combination of Simonoff and Kruppa is silent with regard to the collection step storing the character data a grey scale image format. However, Higgins teaches generating gray scale data values upon scanning the document (col. 4, lines 20-21, 10-15).

The teachings of Simonoff, Kruppa and Higgins are combinable because they are all concerned with optical character recognition. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the character data of Simonoff and Kruppa stored in grey scale image format as taught by Higgins. One would have been motivated to do so in order to preserve all character and image data obtained in the initial scan that may have been eliminated or missed if the character data were scanned and stored in black and white format.

As to claim 13, the combination of Simonoff and Kruppa does not disclose the converting step converts the grey scale image format to a black and white image format. Higgins teaches converting the grey scale values to binary form (black and white format) relative to reference threshold (col. 6, lines 6-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to convert the grey scale image to black and white format as taught by Higgins because it would eliminate any background noise that may have been introduced during scanning or imperfections present in the paper form, allowing for a more accurate character recognition.

As to claim 14, the combination of Simonoff and Kruppa is silent with regard to the printed characters being printed in an E13B font. They refer to the printed characters as magnetic ink characters, MICR character font, or MICR characters. However, Higgins identifies E13B characters in an optical recognition system (col. 7, lines 40-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the printed characters taught by Simonoff and Kruppa be printed in an E13B font as taught by Higgins. It is well known in the art that documents such as checks utilize the E13B font for printing the magnetic ink characters on the checks (Official Notice). Therefore, it would have been obvious to have the printed characters taught by Simonoff and Kruppa be in an E13B font as both teach printing and reading of magnetic ink characters on checks.

As to claim 19, the combination of Simonoff and Kruppa does not disclose the converting means converts the grey scale image format to a black and white image format. Higgins teaches converting the grey scale values to binary form (black and white format) relative to reference threshold (col. 6, lines 6-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to convert the grey scale image to black and white format as taught by Higgins because it would eliminate any background noise that may have been introduced during scanning or imperfections present in the paper form, allowing for a more accurate character recognition.

As to claim 20, the combination of Simonoff and Kruppa is silent with regard to the character data collected by the electro-optical scanning system comprising characters printed in an E13B font. They refer to the printed characters as magnetic ink characters, MICR character

font, or MICR characters. However, Higgins identifies E13B characters in an optical recognition system (col. 7, lines 40-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the character data collected by the electro-optical scanning system taught by Simonoff and Kruppa be printed in an E13B font as taught by Higgins. It is well known in the art that documents such as checks utilize the E13B font for printing the magnetic in characters on the checks (Official Notice). Therefore, it would have been obvious to have the character data taught by Simonoff and Kruppa be in an E13B font as both teach printing and reading of magnetic ink characters on checks.

As to claim 22, the combination of Kruppa and Simonoff is silent with regard to the inputted set of printed characters printed in an E13B font. They refer to the printed characters as magnetic ink characters, MICR character font, or MICR characters. However, Higgins identifies E13B characters in an optical recognition system (col. 7, lines 40-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the character data collected by the electro-optical scanning system taught by Simonoff and Kruppa be printed in an E13B font as taught by Higgins. It is well known in the art that documents such as checks utilize the E13B font for printing the magnetic in characters on the checks (Official Notice). Therefore, it would have been obvious to have the character data taught by Simonoff and Kruppa be in an E13B font as both teach printing and reading of magnetic ink characters on checks.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable the combination of U.S. Patent 6,195,453 to Simonoff, U.S. Patent 6,243,504 to Kruppa, and U.S. Patent 5,091,968 to Higgins et al. (Higgins) as applied to claims and 3 above, and further in view of U.S. Patent Publication 2003/0059099 to Tateishi.

The teachings of Simonoff, Kruppa and Higgins do not disclose the conversion system scaling the character data to approximately 0.33 millimeters/pixel in a horizontal dimension and 0.43 millimeters/ pixel in a vertical dimension. However, Tateishi teaches an E13B character set was designed based on a 9x9 matrix of squares of size 0.33mm (page 2, paragraph 0019). Tateishi also teaches that for an optical reader with a standard resolution of 640x480, a matrix of 19x19 pixels is required to cover the character area (page 2, paragraph 0021).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to scale the character data to approximately 0.33 millimeters/pixel in a horizontal dimension and 0.43 millimeters/pixel in a vertical dimension as this is an obvious approximate to a 1 matrix square to 1 pixel scale with additional space in the vertical direction to avoid cutoff of the top or bottom of the characters.

Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,195,453 to Simonoff and U.S. Patent 6,243,504 to Kruppa as applied to claims 8 and 15 above, and further in view of U.S. Patent Publication 2003/0059099 to Tateishi.

With regard to claims 12 and 18, arguments analogous to those presented for claim 5 above are applicable to claims 12 and 18.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Publication 2002/0051562 to Sheppard et al. is cited for teaching a method and apparatus optically reading MICR and E13B characters.

U.S. Patent 6,654,487 to Downs, Jr. is cited for analyzing the digital image of a check to identify and a character found invalid by a MICR system.

### *Contact Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Mackowey whose telephone number is (703) 306-4086. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AM
2/22/2005

*Jon Chang*
Jon Chang
Primary Examiner